FERRANTI Model 505

General Description : Five-valve (including rectifier), two-waveband universal superheterodyne receiver. Released 1950.

Power Supply : A.C./D.C. mains, 210–250 volts.

Wavebands : M.W. 190–550 m.; L.W. 1000–2000 m.

Intermediate Frequency : 470 kc/s.

Valves : (V1) UCH42; (V2) UF41; (V3) UBC41; (V4) UL41; (V5) UY41.

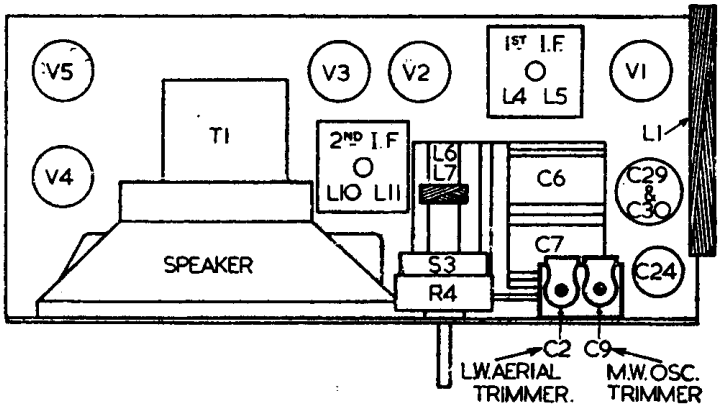
Pilot Lamp : 2·5 volts, 0·2 amp.

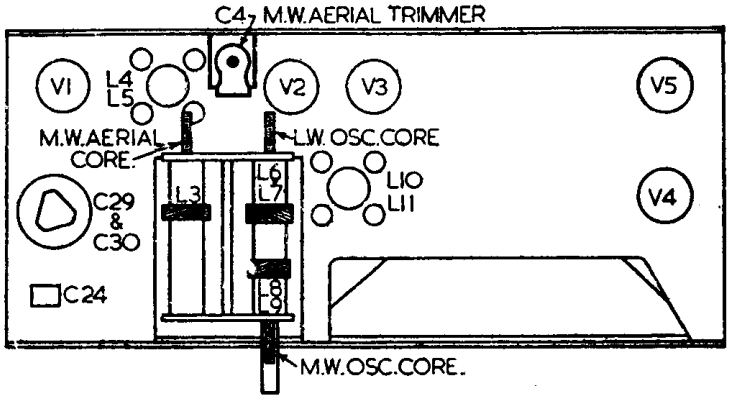
Alignment Procedure : For alignment purposes it is necessary to have the chassis at earth potential on A.C. mains. The correct plug connection can be found by using a neon lamp or voltmeter. Connect signal generator to grid (pin 6) of V1 via 0·1-μF. capacitor and chassis. Set pointer to 400 m., inject 470-kc/s. signal and adjust cores of L11, L10, L5 and L4 for maximum output.

M.W. : Connect signal generator to four-turn loop similar in size to frame aerial in series with 400-ohm non-inductive resistor. As sensitivity increases increase distance between this loop and frame aerials.

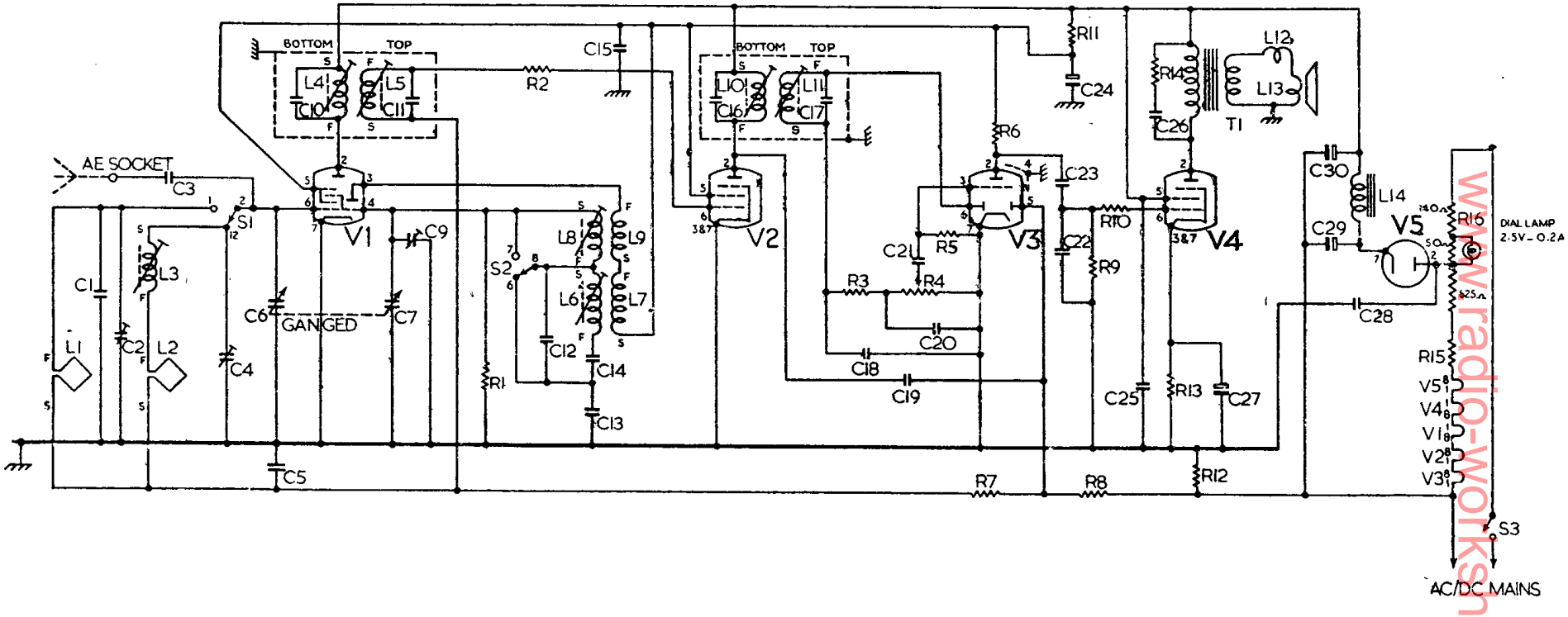
Check that with gang fully meshed, pointer is exactly horizontal and in line with 2000-m. calibration markings. Set pointer to 500 m. Inject 600-kc/s. signal. Adjust cores of L8 and L3 for maximum output. Set pointer to 200 m. Inject 1500-kc/s. signal. Adjust C9 and C4 for maximum output. Repeat at 500 m. and 200 m. until no further improvement can be made.

L.W. : Set pointer to 1450 m. Inject 207-kc/s. signal. Adjust core of L6 and aerial trimmer C2 for maximum output.





CHASSIS LAY-OUT—
FERRANTI MODEL 505



Check Points.

Unsmoothed H.T. 200 volts
Smoothed H.T. 140 volts.
Total H.T. Current 72 mA.
V1 Anode (pin 2) 140 v., 3·5 mA.
Screen (pin 5) 100 v., 5 mA.
Osc. anode (pin 3) 100 v., 5 mA.
V2 Anode (pin 2) 140 v., 8 mA.
Screen (pin 5) 100 v., 2·5 mA.
V3 Anode (pin 2) 60 v., 0·5 mA.
V4 Anode (pin 2) 130 v., 40 mA.
Screen (pin 5) 140 v., 7·5 mA.
Cathode (pins 3 and 7) 7·5 v.

Capacitors.

C1	75 pF.
C2	2·5–40 pF.
C3	15 pF.
C4	2·5–40 pF.
C5	0·1
C9	2·5–40 pF.
C10	105 pF.
C11	105 pF.
C12	190 pF.
C13	500 pF.
C14	1000 pF.
C15	0·1
C16	105 pF.
C17	105 pF.
C18	150 pF.
C19	50 pF.
C20	400 pF.
C21	5000 pF.
C22	400 pF.
C23	0·02
C24	16 (350 v.)
C25	0·05
C26	0·01
C27	25 (25 v.)
C28	0·01
C29, C30	16 + 16 (350 v.)

Resistors.

R1	33k	¼ W. (20%)	R10	220k	¼ W. (20%)
R2	680	¼ W. (10%)	R11	2·2k	½ W. (20%)
R3	100k	¼ W. (20%)	R12	33	¼ W. (20%)
R4	500k	Pot.	R13	150	½ W. (10%)
R5	10M	½ W. (20%)	R14	4·7k	¼ W. (20%)
R6	100k	¼ W. (20%)	R15	240	5 W. (W.W.)
R7	2·2M	¼ W. (20%)	R16	140	0·2A. (10%)
R8	2·2M	¼ W. (20%)		50	0·2A. (15%)
R9	330k	¼ W. (20%)		625	0·15A. (5%)

D.C. Resistances (ohms).

L1	13
L2	0·5
L3	1·5
L4	8
L5	8
L6	4·75
L7	1·1
L8	2·75
L9	0·65
L10	8
L11	8
L12	Very Low
L13	2·5
L14	750
T1 (primary)	330